

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos: 50-275/85-06, 50-323/85-07

Docket Nos. 50-275, 50-323 License Nos. DPR-80, CPPR-69

Licensee: Pacific Gas and Electric Company
77 Beale Street
Room 1435
San Francisco, California 94106

Facility Name: Diablo Canyon Units 1 and 2

Inspection at: San Luis Obispo County, California

Inspection conducted: February 11 through 15, 1985

Inspectors: E. M. Garcia 3/28/85
E. M. Garcia, Radiation Specialist Date Signed

Approved by: G. P. Vuhos 3/28/85
G. P. Vuhos, Chief, Facilities Radiological Date Signed
Protection Section

Summary:

Inspection on February 11 through 15, 1985 (Report Nos. 50-275/85-06 and 50-323/85-07)

Areas Inspected: Routine unannounced inspection by a regionally based inspector including review of Unit 1 biological shield radiation survey; Unit 2 Radiation Protection Program; radiation monitor calibrations, and implementation of NUREG-0737, Items II.B.3 and II.F.1; Unit 2 air purification systems; implementation of Technical Specification 4.4.8; followup on allegation RV-84-A-0107; and plant tours. This inspection involved 39 hours on site by one inspector.

Results: Of the eight areas inspected no violations or deviations were identified.



DETAILS

1. Persons Contacted

a. Pacific Gas and Electric Company

- *R. C. Thornberry, Plant Manager
- *R. Patterson, Plant Superintendent
- M. N. Norem, Lead Startup Engineer
- *R. H. Garacci, Senior C&RP Systems Analyst
- *W. A. O'Hara, Senior C&RP Engineer
- *R. P. Powers, Senior C&RP Engineer
- *D. R. Unger, C&RP Engineer
- M. J. Angus, Reactor Engineer
- A. Dame, Senior Instructor, GET
- K. R. Bieze, Senior Instructor, C&RP
- M. W. Stephens, I&C Maintenance Supervising Foreman
- R. L. Johnson, C&RP Foreman
- H. A. Fergurson, C&RP Foreman
- L. T. Moretti, C&RP Foreman

b. Contractors

R. E. Harris, Senior Radiation Protection Engineer (NUMANCO)

c. NRC Inspectors

- *F. A. Wenslawski, Chief Emergency Preparedness and Radiological Protection Branch
- *M. M. Mendonca, Senior Resident Inspector
- *G. Hamada, Laboratory Specialist
- *M. L. Padovan, Resident Inspector
- *T. J. Polich, Resident Inspector
- *T. M. Ross, Resident Inspector

*Indicates those individuals attending the exit interview on February 15, 1985.

In addition to the individuals noted above, the inspector interviewed other members of the licensee's and contractor's staff.

2. Unit 1 Biological Shield Radiation Survey

The licensee is conducting radiation surveys to determine biological shielding effectiveness. These surveys are part of startup test No. 1.15, and are controlled by temporary procedure TC-8401 "Biological Shield Survey for DCP Unit 1." The procedure and data collected at lower power plateaus have been examined and found acceptable (see Inspection Reports 50-275/85-02, 50-275/84-41, and 50-275/84-15). During the plant tour, the inspector noted an increase in dose rate as one moved in either direction away from Radiation Base Point (RBP) 20. RBPs are predetermined radiation survey points used to compare dose rates at each power level. RBP 20 is located in containment at the 127 foot elevation platform, directly in front of a large penetration on the Biological



Shield. The relative positions of Steam Generator 1-4, and Reactor Coolant Pump 1-4 to this penetration and to RBP 20 result in the changes in dose rates observed. At 75 percent power the dose rate at RBP 20 was approximately 25 mr/hr, as you moved two feet in either direction along the cat walk the dose rate increased to about 60 mr/hr. The inspector noted that this discontinuity in dose rates had not been noted on the preliminary data for the 75 percent power plateau survey. This matter was brought to the attention of the responsible senior C&RP engineer. The licensee stated that supplemental RBPs would be added to account for this discontinuity, and that they would make an evaluation to identify any other areas with similar conditions. At the end of the inspection the licensee informed the inspector that additional data had been collected and their evaluation had not identified any additional areas with these conditions.

No significant problems with the shielding effectiveness have been identified. The neutron energy spectrum collected by a contractor, the final data collected at the 75 percent plateau and the survey data at the 90 percent and 100 percent power plateaus will be examined in future inspections. (50-275/84-31-01, Open)

No violations or deviations were identified.

3. Unit 2 Radiation Protection Program

The inspector examined the licensee's readiness for operation of Unit 2 as it relates to the Radiation Protection Program. Specifically, the inspector examined the status of general employee training (GET), the training of the Chemistry and Radiation Protection Staff, the departmental procedures, the facilities, instruments and equipment, and the department organization and staff. The inspector noted that the licensee is in conformance with the commitments described in section 12.3, Health Physics Program, of the Updated Final Safety Analysis Report (UFSAR).

No violations or deviations were identified.

4. Unit 2 Radiation Monitors Calibration

Previous inspection reports have examined the status of installation and calibration of radiation monitors. The applicable preoperational test procedure is 38.4 "Radiation Monitoring System." The procedure includes area, process, effluent, NUREG-0737 Item II.F.1 accident monitors, and miscellaneous monitors. Isotopic calibrations are not part of this procedure, these calibrations are performed by the NPO I&C department. At the time of the inspection, the following monitors had been released for calibration by the Startup group and had been calibrated by the NPO I&C department:



<u>TYPE</u>	<u>NUMBER</u>	<u>DESCRIPTION</u>
Area	RE-2	Containment Low Range
Area	RE-4	Charging Pump Room
Area	RE-5	Spent Fuel Pool
Area	RE-6	Nuclear Steam Supply Sampling Room
Area	RE-7	Incore Seal Table Room
Area	RE-9	New Fuel Storage
Area	RE-25	Control Room Ventilation Intake
Area	RE-26	Control Room Ventilation Intake
Gas	RE-53	Control Room Pressurization System
Gas	RE-54	Control Room Pressurization System

The portion of test 38.4 associated with the following monitors has been completed and these monitors have been released to NPO for calibration, but the calibration has not been completed:

<u>TYPE</u>	<u>NUMBER</u>	<u>DESCRIPTION</u>
Air Particulate	RE-13	RHR Exhaust Duct Air Particulate
Gas	RE-14A	Plant Vent Radioactive Gas
Gas	RE-14B	Plant Vent Radioactive Gas Backup
Gas	RE-15	Condenser Air Ejector
Liquid	RE-16	Waste Transfer Pump Discharge
Liquid	RE-17A	Component Cooling Water Header A
Liquid	RE-17B	Component Cooling Water Header B
Liquid	RE-19	Steam Generator Blowdown Monitor
Gas	RE-22	Gas Decay Tanks Discharge
Liquid	RE-23	Steam Generator Blowdown Tank Disch.
Iodine	RE-24	Plant Vent Iodine Normal Range
Gas	RE-27	Steam Generator Blowdown Tank Vent
Air Particulate	RE-28A	Plant Vent Air Particulate
Air Particulate	RE-28B	Plant Vent Air Particulate Backup
Gas	RE-29	Plant Vent High Radiation Gross Gamma
Area	RE-30	Containment High Range
Area	RE-31	Containment High Range
Iodine	RE-32	Plant Vent Iodine Mid Range
Gas	RE-33	Plant Vent Noble Gas Mid Range
Area	RE-34	Plant Vent ALARA
Area	RE-35	Iodine Grab Sampler ALARA
Gas	RE-41	Gas Decay Tank 2-1
Gas	RE-42	Gas Decay Tank 2-2
Gas	RE-43	Gas Decay Tank 2-3
Area	RE-48	Sentry PASS ALARA
Gas	RE-71	Main Steam Line lead 1
Gas	RE-72	Main Steam Line lead 2
Gas	RE-73	Main Steam Line lead 3
Gas	RE-74	Main Steam Line lead 4

The portion of test 38.4 associated with the following monitors has not been completed:



<u>TYPE</u>	<u>NUMBER</u>	<u>DESCRIPTION</u>
Air Particulate	RE-11	Containment Air Particulate
Gas	RE-12	Containment Gas
Iodine	RX-40	Plant Vent Iodine Sampler High Range
Area	RE-58	Fuel Handling Building
Area	RE-59	Fuel Handling Building

The records of the calibrations of monitors RE-5 and RE-9 were examined. It was noted that the calibrations had been performed by the applicable procedure and the acceptance criteria were met.

Section 11.4.4.3 of the Updated Final Safety Analysis Report (UFSAR) titled "Calibration Procedures" states in part "Area and process monitors were initially calibrated by their original manufacturer. Response curves for each detector were provided with the instrument. These curves essentially relate detector performance to the energy spectrum that the detector would see in operation." In discussions with the I&C and C&RP staff the inspector was not able to determine who actually had possession of these initial calibration data. During the exit interview the inspector requested that these documents be located for review. The licensee stated that they would attempt to locate the documents and that they would be made available at a subsequent inspection.

During the exit interview the licensee was reminded of the need to have radiation monitors calibrated and operational prior to fuel load. Subsequent to the inspection, the I&C Supervising Foreman informed the inspector that all Unit 2 radiation monitor calibrations are scheduled to be completed by April 15, 1985. The licensee's progress with the radiation monitors of Unit 2 will continue to be examined in future inspections. (50-323/81-05-02, Open)

No violations or deviations were identified in this area.

5. Unit 2 Implementation of NUREG-0737, Items II.B.3 and II.F.1.

Previous inspections have examined the licensee's progress in implementing their commitments as they relate to NUREG-0737 Items II.B.3, "Post Accident Sampling System (PASS)", and II.F.1, "Additional Accident Monitoring Instrumentation," Attachments 1, 2, and 3 (see Inspection Reports 50-323/84-29, 50-323/84-24, 50-323/84-19, and 50-323/85-04).

Results of preoperational test 11.5, "Post LOCA Sampling System" were examined by the NPO staff and found to be unacceptable. Portions of this test will be repeated. The responsible engineer stated that as a result of the required retesting the system will not be declared operational until prior to initial criticality. The licensee has informed NRR of the change in schedule regarding the operability of this system.

The status and calibration of the monitors associated with Item II.F.1 are noted in Paragraph 4 above. The licensee is including these instruments in preoperational test procedure 38.4 with other radiation monitors. With the exception of RX-40, all of the instruments have been released to NPO I&C for isotopic calibration. At the time of the



inspection none of the monitors had been calibrated and declared operable. The licensee estimates that all radiation monitors will be calibrated by the middle of April.

The licensee's progress with their implementation of their commitments to NUREG-0737 will continue to be examined in future inspections.
(50-323/83-26-01, Open)

No violations or deviations were identified.

6. Unit 2 Air Purification Systems

Preoperational test 23.3 "Auxiliary and Fuel Handling Building HVAC" does not demonstrate the operability of the HEPA filters and charcoal absorber bank, as defined in Technical Specification 4.7.6.1, nor had operability been demonstrated by any other test. The operability of this air filtration system will be demonstrated by the NPO Engineering Department. At the time of the inspection, the required filters and absorbers were on site, but had not been installed. The responsible engineer stated that the filters and absorbers would be installed and tested prior to fuel load. He estimated that the work would be completed by the middle of April. The licensee's action on this system and other preoperational tests will be examined in future inspections. (50-323/82-12-01, Open)

No violation or deviations were identified.

7. Implementation of Technical Specification 4.4.8

Technical Specification 4.4.8 "Specific Activity" requires, in part, that an isotopic analysis for Iodine including I-131, I-133, and I-135 be performed on a sample collected between 2 and 6 hours following any thermal power change which exceeds 15 percent of the rated thermal power within a one hour period. This information assists in determining if damage has occurred to the fuel as a result of the rapid power change. The licensee identified that this requirement had not been fulfilled for the power transient of February 5, 1985. The inspector examined that licensee's program in this area and noted that on previous power transients the required samples had been collected and analyzed, but that the results of the analysis had on at least three occasions not been transmitted in a written form to the Shift Foreman. According to the responsible C&RP Foreman the required information had been provided orally.

The licensee's procedure AP C-252 "Chemistry Data Reporting to other Department" states that results of required radio-chemical analysis be listed on Form 69-9394, and that this form be transmitted to the Shift Foreman on a routine basis. The inspector noted that this procedural requirement had not been carried out for the Iodine analysis performed for the transients of November 24, and 28, 1984, and January 2, 1985.

The inspector was informed that this violation of procedural requirements had been previously identified by the Manager of C&RP and that the individuals involved had been counseled regarding the need for strict procedural compliance. The inspector noted that in power transients



after January 2, 1985 the required data was recorded on Form 69-9394. Due to the fact that this violation had been independently identified by the licensee and that corrective action had been initiated no citation is required. This matter was discussed at the exit interview.

8. Followup on Allegation RV-84-A-0107

The concerns expressed in this allegation have been described in Inspection Report 50-275/84-37, Paragraph 5. The only remaining issue of potential safety significance on this matter relates to the disposal of licensed radioactive materials in "ponds" on site. Water samples from the "ponds" on site have been collected and analysed for tritium and other beta and gamma emitters. The results of the analysis for gamma emitters did not identify any radioactive materials above the lower limit of detection of the NRC's gamma spectrometer. These results were reported previously (see page 7 Inspection Report 50-275/84-37). The analysis for tritium did not identify any radioactive materials above the lower limit of detection for the instrument used ($1E-7$ microcuries per milliliter). The analysis for other beta emitters resulted in $1E-7$ plus or minus $2E-7$ microcuries per milliliter at three of the "ponds", with the east raw water reservoir having a value of $4E-7$ plus or minus $2E-7$ microcuries per milliliter. These values are below the maximum permissible concentration allowed by 10 CFR 20 and are consistent with natural background.

Since no radioactive materials other than natural background were found in the "ponds" on site, and since the licensee's program to monitor normally uncontaminated release pathways has not identified any radioactive material (see Paragraph 5 Inspection Report 50-275/84-37) this concern is unfounded. (50-275/84-37-02, Closed)

No violations or deviations were identified.

9. Plant Tour

The inspector toured the plant, including the containment building, to observe the implementation of radiation protection requirements. It was noted that radiation, contamination, high radiation, and very high radiation areas, were properly identified and posted. The access gate to containment was locked, as were individual gates in containment leading to very high radiation areas. The licensee defines very high radiation areas as areas accessible to personnel with dose rates in excess of 1000 mrem/hr. Radiation levels as measured with NRC's instrument were comparable to those measurements made by the licensee with their instrument, and noted in recent radiation surveys. The inspector used a Xetec 305B-3 Geiger Mueller serial number 8189 calibrated on November 7, 1984. Personnel observed in the control area wore appropriate dosimetry and protective clothing as required by radiation work permits.

No violations or deviations were identified in this area.



10. Exit Interview

At the conclusion of the inspection the inspector met with the individuals denoted in Paragraph 1. The scope and findings of the inspection were presented. Specific areas discussed are described in Paragraphs 3, 4, and 7. The licensee was informed that no violations were identified.

